

The American Journal of
**CLINICAL
NUTRITION**



OFFICIAL JOURNAL OF *The American Society for Clinical Nutrition, Inc.*

VOLUME 20
January–December 1967

Copyright © 1967 by The American Society for Clinical Nutrition, Inc.

Requests for any reproduction of copyrighted material should be made in writing to the Executive Editor at 9650 Rockville Pike, Bethesda, Maryland 20014, and should include a statement of intended use and explicit specifications of the material to be reproduced.

Subject Index to Volume 20

- A**bstracts, The American Society for Clinical Nutrition, Seventh Annual Meeting, 361
Adipose tissue: *see also* Fat; Fatty acids; Obesity death, 13
fatty acid composition as to age, race, and sex, 13
lipogenic activity, 116
triglycerides and disease, 1096
Adolescence
cholesterol, 5
Adolescent girls
dieting, 1045
Age
auricular cartilage elasticity and kwashiorkor, 1230
fatty acid composition, 13
Alcohol
cirrhosis, dietary, 213
Alcoholic subjects
bone marrow-erythroid morphology, 716
Amethopterin
nonbinding in milk, 1
Amino acids: *see also* Protein; individual amino acids
soybean diet, 198
Amino acids, absorption
essential amino acids, 24
kinetics, 24
nonessential amino acids, 24
Amino acids, essential
nitrogen equilibrium and retention, 233
opaque-2 maize, 825
Amino acids, plasma, 24, 404
egg white ingestion, 404
glucose ingestion, 243
glucose load test and ketogenic diet, 243
glucose load test and obese subjects, 243
glucose load test, elderly subjects, and level of protein in diet, 243
gluten ingestion, 404
isomeric, high-fat and high-carbohydrate diets, 52
Amino acids, serum
protein-calorie malnutrition, 1295
response to isocaloric meal, 338
response to level of protein in meal, 338
Aminociduria, overflow
kwashiorkor and protein intake, 760
kwashiorkor and vitamin B₆, 760
Anemia: *see also* Iron absorption; Iron balance
dilution anemia, 766
fat emulsions, intravenous infusion, 766
hypopituitarism, inanition, 1179
iron deficiency and menstruation, 842
protein-calorie malnutrition and vitamin E, 783
vitamin B₆ deficiency, 547, 558
vitamin B₁₂, oral, 443
zinc deficiency, 734
Anemia, pernicious
vitamin B₁₂ deficiency, 573, 578
Annual Meeting
abstracts of papers, 361
1967 ASCN Program, 359
Anthropometry
adolescent girls, 1045
blood-serum components in aerospace subjects, 743
culturally deprived children and health, 1084
measurement of lean body mass, 1171
nutritional status in Pakistan, 694
race and sex, 1084
ASCN
1967 Annual Meeting, 359
Ascorbic acid (vitamin C): *see also* Scurvy
excretion and siderosis, 641
function, 583, 591
L-Ascorbic-4-³H acid
metabolism, 250
Ascorbic acid, activity
vitamin B₁₂ deficiency, 578
vitamin B₁₂ serum and methylmalonic acid excretion, 578
Ascorbic acid, deficiency
osteoporosis and siderosis, 799
Ascorbic acid, serum
tissue levels, 514
vitamin intake, 514
Atherosclerosis
adipose tissue, 13
carbohydrate, dietary, 133
cholesterol, serum, 1113
cholesteryl, total esterified, 808
diet, 1151
fat, dietary, 133
lipids, serum, 133, 1013
lipoproteins, serum, 133
serum lipid phosphorus, 1113
sugar, 108
triglyceride level, 997
weight gain, 997
Auricular cartilage elasticity
age and kwashiorkor, 1230
measurement, 1230

- Bacteria**
absorption and malabsorption, 1244
- Basal metabolic rate**
overeating, 1223
- B-complex vitamins**
trace nutrients, 604
- B-complex vitamins deficiency**
phrynodermia, 386
- Beard**
growth and dietary protein, 1158
- Behavior**
malnutrition, 493
- Beriberi**
thiamine deficiency, 528
- Biochemistry**
glucose 6-phosphate compartmentation and glycolysis, 1242
- Biopterin, serum**
folic acid, serum, deficiency and pregnancy, 613
- Biotin**
minimum daily requirement, 903
adults, 903
infants, 903
- Biotin blood levels**
sex, 903
- Bladder stone disease in Thailand**, 1312-1387
age, 1329
children, 1312
crystalluria and fat-free powdered milk supplement, 1387
crystalluria and orthophosphate, 1387
dietary habits and disease prevalence, 1352
economic status, 1329
epidemiology in Ubon Province, Thailand, 1329
exotic plant foods in Thailand, 1352
hypo- and hyperendemic area children, 1362
dietary habits of infants, 1340
newborn and infants, 1369
nutritional intake of infants, 1240
infant feeding practices, 1340, 1352
maternal dietary habits, 1352
morbidity in Ubon Province, Thailand, 1320
newborn and infants, urinary sulfate, 1378
nutrition, 1312, 1329
Oryza glutinosa (glutinous rice), 1340
Oryza sativa (ordinary rice), 1340
protein malnutrition, 1378
urinary composition, 1369
water supply, 1329
- Blood (serum components)**
anthropometry of aerospace subjects, 743
sugar, obesity, 457
- Body composition**
total body and extracellular water
normal children, 1125, 1129
undernourished children, 1129
- Body density**
fat in adult male, 305
potassium 40, total body age and obesity, 708
- Body fat**
adult male, density and age, 305
- Body water compartments**
malnutrition in American and Lebanese children, 1129
normal children, 1125, 1129
undernourished children, 1129
- Bone density**
space flight and recumbency, 1194
- Bone marrow-crythroid morphology**
alcohol (type) consumed by alcoholic subjects, 716
anemia in alcoholic subjects, 716
liver histopathology in alcoholic subjects, 716
- Book Review**
J. C. Martin, *Manual of Applied Nutrition*, 512
- Brain**
starvation, 672, 684
- Butterfat**
fatty acid absorption, 226
- C**alcium: *see also* Bone
growth, 34
- Calcium consumption**
astronauts during orbit and bone density loss, 1194
recumbency and bone density loss, 1194
- Calcium metabolism**
protein metabolism and extra calcium, 34
- Calories**
obesity, 1151
potassium balance, 897
sodium balance, 897
- Carbohydrate**
absorption in malnourished children, 89
electrolyte balance, 157
kwashiorkor and absorption, 89
provision in average diet in United Kingdom, 65
serum lipids, fasting, 345
sugar distribution in United Kingdom, 65
sweeteners, 163
tolerance test, 89
trends in supplies in United Kingdom, past and present, 65
water balance, 157
- weekly consumption in United Kingdom, past and present**, 65
- Carbohydrate, dietary**
atherosclerosis, 133
bread consumption in Middle Eastern population
groups and serum cholesterol, 191
changes by social class in United Kingdom, past and present, 65
cholesterol, serum, 149, 176
coronary heart disease, 149, 191

- Czechoslovakia, past and present, 73
Czechoslovakia, regional variations, 73
dental caries, 152
disease, 73
glucose tolerance, 126
hyperglyceridemia, 116
hyperlipemia, 116
intake, 108
international comparisons, 73
intracellular lipid deposition, 98
lipid metabolism, 198
lipids, serum, 198
normolipemia, 185
obesity, 73
serum triglyceride and hyperlipemia, 168
serum triglyceride and normolipemia, 168
sources in Czechoslovakia, 73
triglycerides, serum, 198
United Kingdom, past and present, 65
water intake, 157
Carbohydrate metabolism
 hyperglyceridemia, 116
 salt regulation, 157
 water metabolism, 157
Cardiac defect, congenital
 metabolism, nitrogen and growth retardation, 1166
Cardiovascular disease
 aerospace subjects, 743
 cholesterol, 5, 743
 lipids, serum, 743
 sugar consumption, 73
Cardiovascular system
 starvation, 684
Carotene: *see* Vitamin A
Carotene, serum
 hemeralopia, 1280
 vitamin A status index, 514
Cereal grains
 lysine supplementation, 1134
Children
 cholesterol, 5
Children, preadolescent
 clinical measurements and sociological factors, 291
 nutrition and sociological factors, 291
Children, preschool
 nutrition, 1253
 nutritional survey in Central Java, 1260
 protective program, 355, 1253
Children, school-age
 malnutrition, early, 1280
Cholesterol
 adolescents, 5
 aerospace subjects, 743
 age, 743
 cardiovascular disease, 743
 children, 5
 food, 475
 ischemic heart disease, 324
 obesity, 777
Cholesterol, serum
 animal versus vegetable protein, 198
 atherosclerosis, 1113
 bread, 191
 carbohydrates, complex dietary, 176
 carbohydrate intake, 116
 cholesterol, dietary, 808
 diet, 475
 meal pattern, 816
 Middle Eastern population groups and bread consumption, 191
Cholesterol, total
 cholesteryl esters and age, 808
 cholesteryl esters and sex, 808
 young children and socioeconomic background, 850
Cholesterol, total esterified
 atherosclerosis, 808
 cholesteryl linoleate, 808
Choline
 cirrhosis, dietary regression, 213
Cirrhosis
 thiamine and red blood cell-transketolase activity, 950
Cirrhosis, dietary
 alcohol intake, 213
 choline, 213
 methionine, 213
 protein, 213
Corn
 lysine supplementation, 1134
Coronary artery disease: *see also* Atherosclerosis; Cholesterol
 hyperglyceridemia and dietary carbohydrate, 116
Coronary heart disease
 adherence to diet, 333
 diet, 1151
 Middle Eastern population groups, serum cholesterol level, 191
Corticosteroids
 gluconeogenesis, 282
Creatine phosphokinase
 vitamin E-deficient diet, 604
Creatinine analysis
 measurement by lean body mass, 1171
Creatinine, urine
 muscle strength in weight loss, 790
 weight loss, 790
Creatinuria
 vitamin E-deficient diet, 604
Crystalluria
 children in a hypo- and hyperendemic area, 1362
 fat-free powdered milk supplementation, 1387
 orthophosphate, 1387
 urinary composition, 1362, 1369

- Cyclamate
sweetener, 163
- Cysteine
metabolism, 547
- Cystic fibrosis
lipid, serum, 415
vitamin A, serum, 415
vitamin E, serum, 415
- D**ata analysis strategy
nutritional survey, 858
- Data, biological
interpretation and ethnic group, 1025, 1040
- Death
adipose tissue, 13
- Decalcification: *see* Bone density
- Dental caries
carbohydrate consumption, 152
frequency of sugar consumption, 152
protective food, 152
sugar, 152
war-time dietary carbohydrate restrictions, 152
- Diabetes mellitus
dietary fat and serum lipids in India, 834
hyperlipemia and vascular disease in India, 834
hypertension, 997
lipids, serum, 997
pantothenic acid excretion, 968
sugar, 108
tocopherol levels, 622
vascular disease, 997
weight gain, 997
- Diarrhea
milk-feeding patterns, 375
- Diet: *see also* Feeding patterns; Food; individual nutrients
- American, 907
 - atherosclerosis, 1151
 - average national income, 108
 - cholesterol composition, 475
 - cholesterol, serum, 475
 - coronary heart disease, 1151
 - evolution, 108
 - fat-containing and fecal fatty acids, 226
 - fat-free and fecal fatty acids, 226
 - fatty acids, 13
 - heart disease, ischemic, 462
 - hepatotoxic effect of alcohol, 213
 - high-carbohydrate and plasma amino acids, 52
 - high-fat and plasma amino acids, 52
 - high-protein
 - nitrogen balance, 927
 - overeating and weight gain, 1212
 - low-carbohydrate
 - blood urea nitrogen, 139
 - cholesterol, 139
 - dehydration, 139
- hyperuricemia, 139
- ketosis, 139
- metabolism, 139
- nutrient omissions, 139
- serum lipids, 139
- weight loss and dietary salt, 1104
- low-protein
 - overeating and weight gain, 1212
 - nutrient balance and thermogenesis, 1212, 1223
 - protein, cirrhosis and alcohol, 213
 - skim milk and fatty acid absorption, 226
 - thermogenesis, induced by, 1212, 1223
 - vegetable-protein and nitrogen balance, 753
 - vitamin E-deficient
 - creatine phosphokinase, 604
 - creatinuria, 604
- Dietary adherence
biochemical determination, 333
male coronary, 333
- Dietary epidemiology, 1151
- Dieting
adolescent girls
patterns and motivations, 1045
- Disaccharidases
small intestinal, localization, 81
activity, 89
- Disease
carbohydrate consumption, 73
- E**ditorial
György, P.: Approach to a promising program for the protection of the preschool child, 1253
- Keys, A.: Dietary epidemiology, 1151
- Rubini, M. E.: Role of The American Journal of Clinical Nutrition, 1149
- Egg white
amino acids, plasma, 404
- glutamic acid, fasting free, 404
- Electrolyte balance
carbohydrate, 157
- Electroretinogram
vitamin A and blood serum levels, 1275
- Enzyme
disaccharidases, localization of, 81
- Epidemiologic studies
short dietary method, 946
- Epidemiology
dietary, 1151
- Epinephrine
gluconeogenesis, 282
- Ethanol
glycerol, plasma, 400
- lipase activity and serum lipid level, 1004
- lipid mobilization, 400
- Exercise
astronauts in orbit and bone density, 1194

- oxygen consumption during, 1223
recumbency and bone density, 1194
- F**asting
plasma fatty acids and hyperlipemia, 1057
plasma fatty acids and normolipemia, 1057
water intake, 157
- Fasting, initial
kaluresis, 897
natruresis, 897
- Fats: *see also* Adipose tissue; Obesity; individual lipid components
- Fats
consumption in Czechoslovakia, past and present, 73
intravenous and anemia, 766
serum lipids, fasting, 345
- Fats, dietary
atherosclerosis, 133
cholesterol, serum, 149
cholesterol, serum in Orientals and Westerns, 198
coronary heart disease, 149
lipids, blood, and diabetes, 834
lipids, blood, and vascular disease, 834
water intake, 157
- Fatty acids: *see also* individual fatty acids
diet, 13, 1057
normolipemia and dietary linoleate, 1057
- Fatty acids, absorption
butterfat, 226
oil, vegetable, 226
- Fatty acids, deficiency
phrynodermia, 386
- Fatty acids, human adipose tissue
age, race, and sex, 13
- Fatty acids, nonesterified
lipid deposition, intracellular, and diabetes, 98
obesity, 457
- Fatty acids, plasma
hyperlipemia and dietary linoleate, 1057
hyperlipemia and fasting, 1057
normolipemia and fasting, 1057
- Fatty acids, polyunsaturated
levels in plasma and erythrocytes in plasma, and phrynodermia, 386
- Feeding patterns
Navajo infant morbidity, 375
- Folate conjugase activity
tropical sprue, 1010
- Folic acid
binding in milk, 1
coenzyme interrelations, 562, 570
metabolism, 562, 570
- Folic acid activity
assay, microbiological, 935
- Folic acid deficiency
biochemical lesions, 562, 570
- biotin and pregnancy, 613
hematologic lesions, 562, 570
- Food
cholesterol composition, 475
cultural superfoods in developing and industrialized countries, 279
enrichment of in American diet, 907
intake frequency and metabolism, 816
lipid composition, 475
nutrients supply in American diet, 907
- Food habits
Guttman scale, 56
industrializing area, 56
study by questionnaire method, 56
- Food, infant
 α -tocopherol, 262
vitamin E, 262
- Food, world supply
population increase, 1134
- Formiminoglutamic acid excretion and vitamin B₁₂ deficiency, 311
- Free fatty acids, plasma
age, 1015
maturation in adolescents, 1015
- Fructose
glyceride level, serum, 185
- G**astroenterology
bacteria, absorption and malabsorption, 1244
- Glucagon
gluconeogenesis, 282
potassium balance, 897
sodium balance, 897
- Gluconeogenesis
corticosteroids, 282
current concepts, 282
epinephrine, 282
glucagon, 282
insulin, 282
- Glucose
load test and plasma amino acid, 243
plasma and obesity, 777
syrup, carbohydrate composition, 163
tolerance, dietary carbohydrate and hyperlipemia, 126
- Glucose 6-phosphate
intracellular compartmentation and glycolysis, 1242
- Gluten
amino acids, plasma, 404
glutamic acid, fasting, free, 404
- Gluttony: *see also* Obesity
levels of protein in diet and weight gain, 1212, 1223
- Glyceride
serum, and fructose, 185
- Glycerol
plasma, and ethanol, 400

- Glycolysis
intracellular Gl-6-P compartmentation, 1242
- Growth
hypopituitarism, inanition, 1179
infants and preschool children, 209
protein metabolism and extra calcium, 34
wheat versus rice in diet, 960
zinc, 422
zinc deficiency, 648
- Growth retardation
metabolism, nitrogen and congenital cardiac defect, 1166
- H**air
growth and dietary protein, 1158
- Health
culturally deprived children and mental maturity, 1084
- Heart
starvation, 672, 684
triglycerides and disease, 1096
- Heart defect, congenital
lipid, serum, 415
vitamin A, serum, 415
vitamin E, serum, 415
- Heart disease, coronary
diet, 1151
- Heart disease, ischemic
cholesterol, 324
diet, 462
lipids, serum, 462
pre-beta lipoproteinemia, 324
- Hematocrit
race and sex, 1084
- Hemeralopia
vitamin A, serum, 1280
- Hemoglobin
Iranian tribal community, 410
Iranian village, 410
malnutrition and tissue changes, 1118
- Hepatomegaly
zinc deficiency, 734
- Hepatotoxin
alcohol, 213
- Hevea brasiliensis*
nutritive value of seed, 1300
- Hormones, steroid
vitamin B₆ and metabolism, tryptophan, 452
- Human measurements
interpretation, 1025, 1040
- Hunger sensations
age differences, 253
sex differences, 253
- Hyperglyceridemia
carbohydrate metabolism, 116
coronary artery disease and dietary carbohydrate, 116
- dietary carbohydrate, 116
sugar intake, 116
- Hyperlipemia
diabetes and vascular disease, 834
dietary carbohydrate, 116
ethanol, 1004
- Hypertension
diabetes, 997
dietary salt, 1151
- Hypertriglyceridemia
dietary carbohydrates, comparison of, 131
fructose, 131
glucose, 131
starch, 131
sucrose, 131
- Hypogonadism
zinc, 422
zinc deficiency, 648
- Hypopituitarism, inanition
anemia, 1179
growth, 1179
testicular failure, 1179
- I**ndia, diet
ischemic heart disease, 462
serum lipids, 462
- Indonesia
nutrition research, 1258-1308
- Infarction, myocardial
sucrose intake, 503
- Insulin
gluconeogenesis, 282
- Intelligence quotient
malnutrition, early, 1290
- Iron: *see also* Hemoglobin
food and cooking utensils, 842
- Iron absorption
pepsin and acid gastric juice, 636
pepsin and pernicious anemia, 636
- Iron balance
menstruation, 842
- K**aluresis
fasting, initial, 897
- Ketonemia
obesity, 457
- Keys, Ancel
recipient, McCollum Award, 1043
- Kwashiorkor
aminoaciduria, overflow, 760
aminoaciduria, overflow, and vitamin B₆, 760
carbohydrate absorption, 89
protein, milk, 270
selenium blood level and in vitro red cell uptake, 723
selenium body stores, 723
vitamin A, 297

Laboratory findings

- Iranian tribal community, 410
- Iranian village, 410
- Lean body mass measurement
anthropometry, 1171
- creatinine analysis, 1171
- whole body counter potassium 40 method, 1171

Learning

- malnutrition, 493
- nutrition, 915

Letters to the Editor

- Baker, H., Frank, O. and Leevy, C.: Red blood cell thiamine concentration, 373
- Bro-Rasmussen, F.: Riboflavin requirement of animal and man, related to protein requirement or energy turnover, 507
- Falkner, F.: Growth of infants and preschool children, 209
- Herman, R. H.: Dietary carbohydrate in hyperlipemia, 659
- Hodges, R. E.: Effects on serum lipids of different dietary proteins and carbohydrates, 1251
- Horwitt, M. K.: Riboflavin requirement of animal and man, related to protein requirement or energy turnover, 509
- Keys, A.: Effects on serum lipids of different dietary proteins and carbohydrates, 1249
- Kuo, P. J.: Dietary carbohydrate in hyperlipemia, 659
- Zakim, D.: Dietary carbohydrate in hyperlipemia, 659

Linoleate, dietary

- hyperlipemia and linoleic-1-¹⁴C metabolism, 1070
- normolipemia and linoleic-1-¹⁴C metabolism, 1070
- plasma fatty acids and hyperlipemia, 1057
- plasma fatty acids and normolipemia, 1057

Lipid : *see also* Fat

Lipid metabolism

- glucose tolerance, 126
- starch, 198

Lipid mobilization

- ethanol, 400

Lipid phosphorus, serum

- atherosclerosis, 1113

Lipid, serum

- analysis, 978
- atherosclerosis, 133, 1113
- cardiovascular disease, 743
- congenital heart defect, 415
- cystic fibrosis in children, 415
- diabetes, 997
- fats, dietary, and vascular disease, 834
- heart disease, ischemic, 462
- level, lipase activity, and ethanol, 1004
- starch versus sucrose, 185

Lipogenic activity

- adipose tissue, 116
- liver, 116

Lipoproteins, serum

- atherosclerosis, 133
- β -Lipoproteins, serum
magnesium oxide, daily, 393
- vitamin B₆, daily, 393

Liver

- disease and red cell hemolysis, 884
- formiminotransferase activity and vitamin B₁₂ deficiency, 311
- histopathology in alcoholic subjects, 716
- lipogenic activity, 116
- phenylketonuria, 446
- phospholipid synthesis, 116
- thiamine stores, 514
- triglycerides and disease, 1096
- zinc deficiency, 734

Lysine supplementation

- cereal grains, 1134
- corn, 1134
- millet, 1134
- rice, 1134
- sorghum, 1134

Magnesium

- adult requirements, 632
- balance and obesity, 632
- dietary, method for estimating, 627
- requirements for young women, 816

Magnesium oxide, daily

- β -lipoprotein, serum, 393
- renal stones, calcium oxalate, 393

Malabsorption

- protein malnutrition, 866
- tropical sprue versus protein malnutrition, 1206
- tropics, 866

Malnutrition

- behavior, 493
- changing concepts, 653
- children, preschool, in Central Java, 1260
- clinical signs, 1118
- feeding patterns and morbidity in children, 375
- learning, 493
- mental retardation, 493
- phrynodermia, 386
- protein, milk, 270
- protein-calorie, in Indo-Pakistan subcontinent, 694
- rickets, history of, 1234
- tissue changes and hemoglobin concentrations, 1118
- vitamin E deficiency in Uganda, 884

Malnutrition, early

- health of school-age children, 1280
- mental development, 1290

Malnutrition, protein

- hookworm disease and malabsorption, 866
- iron-deficiency anemia and malabsorption, 866
- malabsorption, 1206

Malnutrition, protein-calorie

- fatty acid absorption, 226

- Malnutrition, protein-calorie—(Continued)
 hematologic data, 783
 metabolism, 226
- Meal pattern
 cholesterol, serum, 816
 metabolism, 816
- Menarche
 adolescence and plasma free fatty acids, 1015
- Menstruation
 iron-deficiency anemia, 842
- Mental development
 malnutrition, early, 1290
- Mental maturity
 race and sex, 1084
- Mental retardation
 malnutrition, 493
- Metabolic rate
 starvation, 684
- Metabolism
 ascorbic acid, 583, 591
 α -ascorbic-4- ^{3}H acid, 250
 ascorbic acid and siderosis, 641
 carbohydrate, hyperglyceridemia, 116
 cysteine, 547
 folic acid, 562, 570
 low-carbohydrate diet, 139
 niacin, 547
 pantothenic acid, 968
 selenium, 723
 starvation, 672, 684
 vitamin, 514, 528, 543
 zinc, 648
- Metabolism, linoleic acid-1- ^{14}C
 hyperlipemia and dietary linoleate, 1070
 normolipemia and dietary linoleate, 1070
- Metabolism, lipid
 ethanol, 1004
- Metabolism, nitrogen
 cardiac defect, congenital, and growth retardation, 1166
- Metabolism, protein
 growth, 34
 starvation, 672
 vitamins, 604, 612
- Metabolism, tryptophan, 547, 558
 excretion in starving obese subjects, 317
 hormones, steroid, and vitamin B₆, 452
- Methionine
 cirrhosis, dietary, regression, 213
- Methylmalonic acid
 vitamin B₁₂ deficiency, diagnosis of, 573, 578
- Milk
 amethopterin binding, 1
 PGA binding and autoclaving, 1
 PGA binding and folate, 1
 folate binding
 ascorbic acid, 1
 autoclaving, 1
 rebinding, 1
 vitamin B₁₂ binding, 1
- Milk-feeding patterns
 diarrhea, 375
 infant growth, 375
 infant morbidity, 375
- Milk, modified
 premature infants, 1308
- Millet
 lysine supplementation, 1134
- Monosaccharide
 kwashiorkor and absorption, 89
- Morbidity
 Navajo infant feeding patterns, 375
- Motor development
 malnutrition in preschool children, 1260
- Muscle strength
 weight loss, 790
- N**atriuresis
 fasting, initial, 897
- Neurophysiology of brain
 malnutrition, early, 1290
- Niacin (nicotinic acid)
 metabolism, 547
- Nitrogen
 intake and retention, 927
 integumentary loss and protein intake, 1158
 retention, adult man, 927
- Nitrogen balance, 927
 adult, 632
 diet, vegetable protein, 753
opaque-2 maize, protein, 825
- Nitrogen retention
 amino acids, essential, 233, 927
- Normolipemia
 dietary carbohydrate, 185
- Nutrient analysis, 514, 526
- Nutrients
 United States food supply, 907
- Nutrition
 clinical measurements, preadolescent children, 291
 deficiencies, detection of, 513-612
 future, 923
 learning, 915
 physiology, 34, 43
 preschool child, 493
 protein, rubber-seed, 1300
 skeleton of aged, 43
 sociological factors, preadolescent, 291
 Surinam, 43
 children, 34
 vitamin, 528, 543
- weight control and adolescent girls, 1045
 world needs and caloric insufficiency, 1134
 zinc, of Iranian children, 734

- Nutrition Foundation
 nutrition education, 915
 program trends, 915
 Venture Grants, 915
- Nutrition, human
 zinc, 648
- Nutrition News
 AGS grants, 511
 Ancel Keys, recipient McCollum Award, 1043
 Body Composition Conference, 211
 International Conference on Malnutrition, Learning, and Behavior, 211
 International Symposium on Protein Foods and Concentrates, 211
 McCollum Award, 210
 Norman Jolliffe Award, 210
 Single-Cell Protein Conference, 511
 Symposium on Vitamins, 511
 Tenth Annual Meeting, Canadian Federation of Biological Societies, 210
 Twelfth Annual Conference on Nutrition and Metabolism, 920
 Western Seminar of Food-Update Industry, 211
- Nutrition research
 Indonesia, 1258-1308
 Thailand, 1312-1387
- Nutritional status
 anthropometric measurements, Pakistani, 694
 Pakistan, 694
 pellagra in Istria, Yugoslavia, 888
 young children and socioeconomic background, 850
- Nutritional study
 British Honduras, 661
 Pakistan, 694
 wheat-rice in Hong Kong, 960
- Nutritional survey
 data analysis strategy, 858
- O**besity: *see also* Adipose tissue; Fat; Fatty acids;
 Gluttony
 adolescent girls, 1045
 biochemical measurements, 777
 blood sugar, 457
 body density and total body potassium 40, 708
 calories, 1158
 carbohydrates, dietary, 73
 cholesterol, 777
 glucose, plasma, 777
 high school performance, 352
 ketonemia, 457
 low-carbohydrate diet, 139
 muscle strength in weight loss, 790
 nonesterified fatty acids, 457
 plasma amino acids and glucose load test, 243
 respiratory quotient, 457
 skin fold, subscapular, as index, 954
- skin fold, triceps as index, 954
 triglyceride, serum, 777
 uric acid, 777
 vanilmandelic acid excretion, 457
 vitamin B₆ deficiency in starvation, 317
 weight control, 1045
- Oil, vegetable
 fatty acid absorption, 226
- Opaque-2* maize
 amino acids, essential, 825
 nitrogen balance and body size, 825
- Oryza glutinosa* (glutinous rice)
 bladder stone disease, 1340
- Oryza sativa* (ordinary rice)
 bladder stone disease, 1340
- Osteoporosis
 Bantu males, 799
 nutrition, 43
 scurvy and siderosis, 799
 siderosis and ascorbic acid deficiency, 799
 Surinam, 43
- Overeating
 basal metabolic rate, 1223
- Overnutrition: *see* Gluttony
- Ovulation control
 steroid hormones and metabolism, tryptophan, 452
- Oxalic acid
 excretion and siderosis, 641
- Oxygen
 consumption during exercise, 1223
- P**antothentic acid
 diabetes, excretion in, 968
 role in human nutrition, 968
- Pellagra
 Istria, Yugoslavia, 888
 skin changes, 888
- Pepsin
 iron absorption and acid gastric juice, 636
 iron absorption and pernicious anemia, 636
 vitamin B₁₂ absorption and acid gastric juice, 636
 vitamin B₁₂ absorption and pernicious anemia, 636
- Peroxide hemolysis test
 vitamin E, plasma, 795
- Phenylketonuria
 liver function, 446
- Phrynodermia
 B-complex vitamin deficiency, 386
 fatty acid deficiency, 386
 polyunsaturated fatty acid levels in plasma, and erythrocytes, 386
 safflower oil, 386
- Population increase
 world food supply, 1134
- Potassium
 metabolism and starvation, 897

- Potassium 40, total body
body density and age, 708
body density and obesity, 708
- Pre-beta lipoproteinemia
heart disease, ischemic, 324
- Pregnancy
vitamin C requirement, 583
- Premature infants
skim milk in complete infant formula, 1308
- Presidential Address
R. E. Hodges: Nutrition of the future, 923
- Protein
cirrhosis, dietary, regression, 213
consumption in Czechoslovakia, past and present, 73
deficiency in developing countries, 1134
requirement, adult man, 927
riboflavin and energy turnover, 507, 509
supply and world food problem, 1134
- Protein-calorie malnutrition
essential-to-nonessential ratio, 1295
- Protein, dietary
blood urea nitrogen and dermal excretion, 1158
hair and beard growth rate, 1158
integumentary loss of nitrogen, 1158
water intake, 157
- Protein, intake
aminoaciduria, overflow, and kwashiorkor, 760
- Protein malnutrition
malabsorption, 866
- Protein, milk
kwashiorkor, 270
- Protein, plasma
Iranian tribal community, 410
Iranian village, 410
- Protein, rubber-seed
nutritional value, 1300
- Pteroylglutamic acid
binding in milk, 1
- Pyridoxine: *see* Vitamin B₆
- Pyridoxine deficiency
arteriosclerosis, 702
vascular tissue, 702
- R**ace
anthropometric measurements and mental maturity, 1084
fatty acid composition, 13
- Recumbency
bone density, 1194
- Red cell
thiamine, 46
- Red cell hemolysis
liver disease, 884
vitamin E deficiency, 884
- Red palm oil
carotene, 1267
vitamin A deficiency, 1267
- Renal stones, calcium oxalate
magnesium oxide, daily, 393
vitamin B₆, daily, 393
- Respiratory quotient
obesity, 457
- Rest
oxygen consumption during, 1223
thermogenesis during, 1223
- Riboflavin: *see also* Vitamin B₁₂
plasma level and intake, 514
plasma level and nutritional status, 514
protein requirement or energy turnover, 507, 509
- Rice
bladder stone disease in Thailand, 1340, 1352
lysine supplementation, 1134
- Rickets
history in United States, 1234
- Rubber-seed protein
nutritional value, 1300
- S**accharin
sweetener, 163
- Safflower oil
phrynodermia, 386
- Safflower oil meal
lipid deposition, intracellular, 98
- Salt, dietary
hypertension, 1151
low-carbohydrate diet and weight loss, 1104
low-fat diet and weight loss, 1104
- Satiety
sensations, age differences, 253
sensations, sex differences, 253
- Scurvy: *see also* Ascorbic acid
ascorbic acid, 591
methylmalonic acid as diagnostic aid, 578
osteoporosis and siderosis, 799
siderosis in Johannesburg Bantu, 641
- Selenium
metabolism, 723
- Selenium, blood
selenium in vitro red cell uptake and kwashiorkor, 723
- Selenium body stores
kwashiorkor, 723
- Selenium uptake
red cells and kwashiorkor, 723
- Serum-folate activity
vitamin B₁₂ deficiency, 311
- Serum-folate levels
bone marrow-erythroid morphology in alcoholic subjects, 716
- Serum lipids, fasting
carbohydrates and fats, interplay, 345
- Serum triglyceride
carbohydrate, dietary, 168
- Siderosis
metabolism, ascorbic acid, 641

- osteoporosis and ascorbic acid deficiency, 799
scurvy in Johannesburg Bantu, 641
- Skeleton: *see* Bone density
- Skim milk
complete infant formula, 1304, 1308
protein-efficiency ratio in infant formula, 1304, 1308
- Skin fold, subscapular
obesity index, 954
- Skin fold, triceps
adolescence
 handedness, 986
 menarche, 986
 and sex, 986
age, 986
obesity, index, 954
- Sociological factors
 clinical measurements, preadolescent children, 291
 nutrition measurements, preadolescent children, 291
- Sodium
 metabolism and starvation, 897
- Sorghum
 lysine supplementation, 1134
- Soybean diet
 amino acid pattern, 198
- Space flight
 bone density, 1194
- Starvation
 basal metabolic rate, 684
 brain, 672, 684
 heart, 672, 684
 hypohydration, 672
 mental condition, 672
 mineral loss, 672
 potassium balance, 897
 respiratory quotient, 684
 sodium metabolism, 897
- Starvation, metabolism, 672, 684
 performance and cardiovascular evaluation, 684
 protein, 672
- Starvation, semi-
 respiratory quotient, 684
- Steatorrhea: *see also* Diarrhea
 tocopherol depletion, 594
- Stevioside
 sweetener, 163
- Stress
 vitamin C requirement, 583, 591
- Sucrose
 infarction, myocardial, 503
 manufactured food in United Kingdom, (1965), 163
 properties as a food ingredient, 163
- Sugar
 atherosclerosis, 108
 cardiovascular disease, 73
Czechoslovakia, past and present, 73
- dental caries, 152
diabetes, 108
distribution in United Kingdom, 65
hyperglyceridemia, 116
world, yearly consumption, 108
- Sweeteners
 artificial, consumption in United Kingdom and
 United States, 65
 carbohydrate, 163
 comparison, 163
 cyclamate, 163
 saccharin, 163
 stevioside, 163
- T**eeth: *see* Dental caries
- Testicular failure
 hypopituitarism, inanition, 1179
- Thailand
 nutrition research, 1312-1387
- Thermogenesis
 dietary induced, 1212, 1223
 exercise, during, 1223
 rest, during, 1223
- Thiamine (vitamin B₁)
 blood levels and body stores, 514
 cirrhosis and red blood cell transketolase activity, 950
 nutritional status and erythrocyte transketolase activity, 528, 543
 red cell, 46
 serum, 46
 tissue stores, 514
- Thiamine deficiency
 beriberi, 528
 biochemical alterations, 514, 528, 543
 neuropathy, and red blood cell-transketolase activity, 950
- Thiamine intake
 excretion, 514
 growth rate, 514
 urinary level, 528, 543
- Thiamine tissue reserves
 erythrocyte transketolase activity, 528, 543
- Thiochrome method
 thiamine concentration in red blood cells, 46
- α -Tocopherol
 infant foods, 262
- Tocopherol deficiency
 creatinuria, 594
 man, 594, 602
- Tocopherol levels
 adipose tissue and plasma, 622
 diabetes, 622
- Tocopherol, serum
 hydrogen peroxide hemolysis test, 594, 602
- Transketolase activity, red blood cell
 malnourished alcoholics with cirrhosis, 950

- Triglycerides
adipose tissue and disease, 1096
heart and disease, 1096
liver and disease, 1096
young children and socioeconomic background, 850
- Triglycerides, serum
carbohydrate, dietary, 198
obesity, 777
- Tropical sprue
folate conjugase activity, 1010
malabsorption, 1206
- Tryptophan
metabolism, 547, 558
- Tryptophan load test
vitamin B₆ deficiency, 547, 558
- U**ric acid
obesity, 777
- Urinary sulfate
newborn and infants, hypo- and hyperendemic area, 1378
- Urine composition
protein and calcium in diet, 34
- V**anilmandelic acid excretion
obesity, 457
- Vascular disease
d'abetes, 997
hyperlipidemia and diabetes in India, 834
- Vitamin
fat soluble, 604, 612
metabolism, 514
microbiological assay, 935
young children and socioeconomic background, 850
- Vitamin, blood, level
body stores index, 514
- Vitamin body stores
blood vitamin level as index, 514
urinary vitamin level as index, 514
- Vitamin A
blood serum levels and electroretinogram, 1275
kwashiorkor, 297
- Vitamin A deficiency
red palm oil, 1267
- Vitamin A, serum
congenital heart defect, 415
cystic fibrosis in children, 415
hemeralopia, 1280
vitamin A stores index, 514
- Vitamin A status
carotene, serum, as index, 514
- Vitamin B₁ : *see also* Thiamine
biochemical alterations, 528, 543
- Vitamin B₁ deficiency
beriberi, 528
- Vitamin B₂: *see* Riboflavin
- Vitamin B₆
aminoaciduria, overflow, and kwashiorkor, 760
deficiency in starving obese subjects, 317
metabolism, tryptophan, 452
vascular tissue content, 702
- Vitamin B₆, blood
vitamin B₆ intake, 547, 558
- Vitamin B₆, daily
 β -lipoproteins, serum, 393
renal stones, calcium oxalate, 393
- Vitamin B₆ deficiency
anemia, 547, 558
arteriosclerosis, 702
biochemical changes, 547, 558
central nervous system, 547, 558
physiological changes, 547, 558
vitamin B₆ withdrawal from diet, 547, 558
- Vitamin B₁₂ : *see also* Riboflavin
binding in milk, 1
serum, 443
- Vitamin B₁₂ absorption
pepsin and acid gastric juice, 636
pepsin and pernicious anemia, 636
- Vitamin B₁₂ deficiency
ascorbic acid activity, 578
formiminoglutamic acid excretion, 311
liver-formiminotransferase activity, 311
methylmalonic acid as a diagnostic aid, 573, 578
pernicious anemia, 573, 578
serum-folate activity, 311
- Vitamin B₁₂ stores
vitamin B₁₂, oral, 443
- Vitamin C: *see also* Ascorbic acid; Scurvy
stress, requirement in, 583, 591
- Vitamin C requirement
methods to determine, 583
pregnancy, 583
- Vitamin C, serum
vitamin C intake, 514
- Vitamin E
hematologic response and protein-calorie malnutrition anemia, 783
infant foods, 262
- Vitamin E deficiency, 795
cardiovascular accident, 884
cirrhosis, 884
pathology, 594, 602
physiology, 594, 602
symptoms, 604
Uganda, 884
- Vitamin E, plasma
peroxide hemolysis test, 795
- Vitamin E, serum
congenital heart defect, 415
cystic fibrosis in children, 415
- Vitamin H: *see* Biotin

Vitamin K
actinomycin D, 604

Water balance
carbohydrate, 157
Water, total body
extra- and intracellular water in normal children,
1125, 1129
extra- and intracellular water in undernourished
children, 1129
Weight
gain and atherosclerosis, 997
gain in diabetes, 997
Weight control
adolescent girls and nutritional knowledge, 1045

Wheat
replacement for rice, 960

Xerophthalmia
red palm oil, 1267

Zinc
growth, 422
hypogonadism, 422
nutrition, human, 648
Zinc deficiency
anemia, 734
growth, 734
growth retardation, 648
hepatomegaly, 734
hypogonadism, 648

Author Index to Volume 20

- Adibi, S. A., 24
Ahuja, M. M. S., 834
Albrink, M. J., 986
Allen, M. F., 743
Allen, P. E., 233, 825
Allen, R. J. L., 163
Amirkhani, G. H., 734
Anderson, J. T., 168, 475
Anson, M. L., 1134
Arnold, G., 1010
Asfour, R. Y., 1129

Baker, E. M., 250, 583
Baker, H., 543, 850, 858, 946
Barbezat, G. O., 89, 760
Barness, L. A., 573
Bartsch, G. E., 13
Bassilly, S., 422
Bean, W. B., 960
Beg Mirza, A., 694
Begum, A., 297
Belavady, B., 386
Bell, E. M., 250
Belton, C., 1096
Bennett, M. J., 415
Berelowitz, I., 799
Bhagavan, H. N., 903
Bierenbaum, M. L., 333
Bieri, J. G., 612
Binder, H. J., 594
Blankenship, J. W., 753
Bliffen, G., 986
Blondheim, S. H., 131
Bloom, W. L., 157
Boger, W. P., 446
Bolaños, O., 866
Bongiovanni, E. T., 404
Bortz, W. M., 1104
Bosch, R., 34
Bothwell, T. H., 641, 799
Bowie, M. D., 89
Bramschreiber, J. L., 716
Brodaresc, A., 888
Brody, E. A., 443
Brook, M., 163
Broquist, H. P., 613
Brown, D. F., 324
Brown, R. E., 1230
Brush, M. K., 927
Burk, R. F., Jr., 723
Buzina, R., 888

Calloway, D. H., 1158

Cambridge, T. H., 34
Canning, H., 352
Castelli, W. P., 98
Caughey, J. E., 1179
Charlton, R. W., 641, 799
Chassy, J. P., 56
Cheek, D. B., 1166
Chen, A. W., 250
Chinn, K. S. K., 305, 708
Christakis, G., 850, 858
Chutikorn, C., 1320
Clark, D. A., 743
Clark, H. E., 233, 825
Cohen, A. M., 126
Cohen, N. N., 116
Consolazio, C. F., 672, 684
Cooperman, J. M., 1015
Cousin, D. B., 558, 903
Cross, E., 694
Csima, A., 133

Dahlqvist, A., 81
Darby, W. J., 422
Davies, A. R., 716
Davis, K. C., 262
De Villiers, L. S., 270
Dhanamitta, S., 1362, 1369,
 1378, 1387
Dicks-Bushnell, M. W., 262
Dinning, J. S., 783
Djoko Sarwono, 1275
Dohle, T., 34
Doyle, J. T., 324
Drenick, E. J., 52, 243, 317
Duffey, P. H., 716
Dumm, M. E., 297
Dunavant, B. G., 1171
Dutz, W. E., 410, 1179
Dwyer, J. T., 1045
Dysinger, P. W., 753

Eisenstein, A. B., 282
Eminians, J., 734
Evans, T. C., 960

Farid, Z., 422
Feeley, R. M., 816
Feingold, S., 850
Feinman, L., 400
Feldman, J. J., 1045
Feldschuh, J., 790
Fellingham, S. A., 270
Feng, L., 116

Fennelly, J., 946
Fetcher, E. S., 475
Figueredo, W. G., 52
Finch, C. A., 842
Fisher, H., 927
Fitts, W. T., Jr., 116
Fleischman, A. I., 333
Fleming, A. F., 613
Flink, E. B., 632
Floch, M. H., 1244
Flora, R. E., 627
Flynn, M. A., 1125, 1129
Fort, E. G., 783
Foster, N., 475
Frank, O., 850, 858, 946
French, J. G., 375
Friend, B., 907
Fry, P. C., 954
Fugate, K., 233
Furno, O. F., 1084

García, F. T., 866
Gattreau, A., 997
Gavin, J. J., 446
Genest, A. A., 1275
Gershoff, S. N., 393
Ghitis, J., 1, 866, 1206
Goksu, S., 954
Good, E. I., 139, 968
Goodhart, R. S., 513
Gossain, V. V., 834
Grande, F., 176, 475
Gray, S. J., 24
Greaves, J. P., 65
Gregurić I., 888
Griffith, W. H., 591
Griminger, P., 927
Groen, J. J., 191
György, P., 1253, 1258, 1267,
 1275, 1280, 1304

Hagemann, R. F., 960
Halstead, S. B., 1312-1362
Hamwi, G. J., 897
Hankin, J. H., 935
Hanna, F. M., 1125, 1129
Hansen, J. D. L., 89, 760
Harding, R. S., 404
Harris, P. L., 602
Hartles, R. L., 152
Hartroft, W. S., 213
Hashim, S. A., 226
Hatano, M., 960

- Hayat, K., 694
 Hayton, T., 333
 Heald, F. P., 1010
 Hegsted, D. M., 311
 Hepner, R., 694
 Herbert, V., 562
 Herman, R. H., 1242
 Hillman, R. W., 1118
 Hodges, R. E., 139, 198, 808, 923, 960, 1252
 Hollingsworth, D. F., 65
 Hollister, L. E., 777
 Horning, M. C., 753
 Horvat, A., 888
 Houser, H. B., 46
 Howard, T., 622
 Howe, E. E., 1134
 Husaini, 1300
- Iacono, J. M., 766
 Iber, F. L., 1166
 Inano, M., 753
 Insull, W., Jr., 13
 Irwin, M. I., 816
 Isaac, G. J., 404, 684
 Isaac, T., 297
 Issekutz, B., Jr., 1104
- Jansen, G. R., 1134
 Jarrold, T., 716
 Jelliffe, D. B., 279, 1230
 Johnson, H. L., 672, 684
 Johnson, R. E., 1096
 Jones, J. E., 627, 632
 Joven, C. B., 243, 317
 Jušić, M., 888
- Kahn, S. B., 578
 Kalluc, K., 694
 Kaufmann, N. A., 131
 Kaunitz, H., 1096
 Keys, A., 475, 1151, 1251
 Kfouri, G. A., 734
 Kheim, T., 702
 Kinsell, L. W., 622
 Kirk, J. E., 702
 Klahr, S., 866
 Klipstein, F. A., 1004
 Kohout, E., 410
 Krawitz, P., 799
 Krehl, W. A., 139, 198, 808, 960, 968
 Kruger, F. A., 897
 Kruger, H., 270
 Krzywicki, H. J., 305, 672, 684, 708
 Kuhn, I. N., 842
 Kuo, P. T., 116
- LaChance, P. A., 1194
 Lauw Tjin Giok, 1280, 1290, 1300
 Lee, V. A., 5
 Leeper, D. B., 960
 Levy, C. M., 570, 946
 Leonard, P. J., 795
 Leverton, R. M., 954
 Levine, R. A., 404
 Lieber, C. S., 400
 Liem Tjay Tie, 1260, 1267
 Linkswiler, H., 547
 Little, J. A., 133
 Lopez-S, A., 139, 198, 808, 968
 Losowsky, M. S., 795
 Lutz, R. N., 1125, 1129
 Luyken, R., 34, 43
 Luyken-Koning, F. W. M., 34, 43
 Lynch, S. R., 641, 799
- Macdonald, I., 185, 345
 Mack, P. B., 1194
 Malhotra, S. L., 462
 Manalo, R., 627, 632
 Mann, G. V., 1040
 Margin, S., 935, 1158
 Mašek, J., 457
 Massey, F. J., 243
 Matoush, L. O., 672, 684
 Mayer, J., 253, 352, 950, 1045
 Mayoral, G., 1206
 Mayoral, L. G., 866
 McClelland, J., 446
 McCoy, J., 986
 McMasters, V., 622
 Medwadowski, B., 415
 Menden, E., 24
 Méndez, J., 1113
 Merrow, S. B., 291, 978
 Meyers, S. M., 825
 Miale, A., Jr., 422
 Miller, C. L., 404
 Miller, D. S., 1212, 1223
 Miller, G. B., 799
 Miller, L. D., 116
 Mitchell, M. C., 897
 Moe, P. G., 1179
 Monello, L. F., 253
 Monsen, E. R., 842
 Morland, J., 503
 Morris, P., 1104
 Morrison, D., 1010
 Mueller, L. M., 452
 Muhiilal, 1295
 Mumford, P., 1212, 1223
 Myint, T., 46
- Nadeau, R. G., 338
 Nelson, R. A., 672, 684
- Nichaman, M. Z., 1057, 1070
 Nickerson, R. J., 98
 Nocks, B. N., 661
- Oey Henk Jan, 1290
 Oey Khoen Lian, 1260, 1267
 Olcott, H. S., 622
 Olson, R. E., 604, 1057, 1070
 Ošancová, K., 73
 Overall, J. E., 777
- Pantuwatana, S., 1340
 Pargman, D., 790
 Pearson, W. N., 514, 723
 Pek Hien Liang, 1290
 Pereira, S. M., 297
 Petrosian, A., 410
 Poey Seng Hin, 1295
 Porta, E. A., 213
 Poznanski, R., 131
 Prasad, A. S., 422, 648
 Prawiranegara, D. D., 1267
 Pretorius, P. J., 270
 Price, J. M., 452
 Prien, E. L., 393
 Prinsloo, J. G., 270
- Rath, R., 457
 Register, U. D., 753
 Reinheimer, W., 986
 Reinhold, J. G., 734
 Reynolds, W. E., 935
 Roessler, G. S., 1171
 Rose, C. S., 1260, 1267, 1280, 1295
 Rubini, M. E., 1149
 Rutstein, D. D., 98
- Samsudin, 1300, 1304, 1308
 Sanchez, H., 43
 Sandstead, H. H., 422
 Saratsiotis, J. B., 1084
 Sauberlich, H. E., 528
 Saunders, S. J., 760
 Schachner, S. S., 897
 Schade, S. G., 636
 Schaefer, A. E., 526
 Schilling, R. F., 636
 Schulert, A. R., 422
 Scrimshaw, N. S., 493
 Seabold, W., 1010
 Sebrell, W. H., Jr., 226, 653
 Seetharaman Bhat, K., 386
 Seftel, H. C., 641, 799
 Seltzer, C. C., 950
 Shanoff, H. M., 133
 Sharif, H., 734
 Sipple, H. L., 915

Author Index

- Sirbu, E. R., 1158
 Siti Zuraida, 1295
 Snow, H. L., 777
 Sood, N. K., 884
 Sostman, E. R., 927
 Spiro, H. M., 594
 Stare, F. J., 149
 Stein, Y., 131
 Stine, O. C., 1084
 Stock, M. J., 1223
 Stone, D. B., 198
 Sweeley, C. C., 1057, 1070
 Swendseid, M. E., 52, 243, 317
- Takada, A., 213
 Talkington, L., 858
 Tankayul, C., 1340
 Tarwotjo, I., 1300
 Tejada, C., 1113
 Thio Wie Liong-Ong, 1260
 Thornton, M. J., 452
 Thurston, C. E., 753
 Tjiook Tiauw Hie, 1290
 Tolbert, B. M., 250
 Torrance, J. D., 641
- Tripathy, K., 866, 1260
 Tuckett, S. E., 825
 Tulloch, J. A., 884
 Tuttle, S. G., 243
- Umpaivit, P., 1352
 Underwood, B. A., 226, 694
- Valyasevi, A., 1312-1387
 Van der Veen, J., 622
 Van Reen, R., 1378, 1387
 Van Staveren, W. A., 43
 Van Veen, A. G., 56
 Verdy, M., 997
 Veselková, A., 457
 Vidláková, M., 457
 Vimokesant, S., 783
 Vinyard, E., 52, 317
 Vitale, J. J., 311
 Viteri, F., 723
 Vyhmeister, I. B., 753
- Wakefield, L. M., 291
 Walker, A. R. P., 1025
- Wallace, D., 986
 Wehmeyer, A. S., 270
 Weick, M. T., 1234
 Weir, D. R., 46
 Whitaker, J. A., 783
 Wieland, R. G., 897
 Will, J. J., 716
 Williams, M. L., 1308
 Wilson, F. H., Jr., 743
 Wittmann, W., 760
 Wolf, K. P., 1166
 Wood, R. P., II, 723
 Wroldson, A., 1104
- Yamada, C., 52
 Yamamura, Y., 825
 Yearick, E. S., 338
 Young, F. W., 56
 Yudkin, J., 108, 503
- Zakim, D., 1242
 Zeegelaar, F. J., 43
 Zellner, D. C., 766
 Ziai, M., 734
 Ziffer, H., 850, 858

The American Journal of
**CLINICAL
NUTRITION**



OFFICIAL JOURNAL OF *The American Society for Clinical Nutrition, Inc.*

VOLUME 20
January–December 1967

Copyright © 1967 by The American Society for Clinical Nutrition, Inc.

Requests for any reproduction of copyrighted material should be made in writing to the Executive Editor at 9650 Rockville Pike, Bethesda, Maryland 20014, and should include a statement of intended use and explicit specifications of the material to be reproduced.

CONTENTS OF VOLUME 20

No. 1, January 1967

The Folate Binding in Milk. J. GHITIS.....	1
Individual Trends in the Total Serum Cholesterol of Children and Adolescents over a Ten-Year Period. V. A. LEE.....	5
Fatty Acid Composition of Human Adipose Tissue Related to Age, Sex, and Race. W. INSULL, JR. AND G. E. BARTSCH.....	13
The Kinetics of Amino Acid Absorption and Alteration of Plasma Composition of Free Amino Acids after Intestinal Perfusion of Amino Acid Mixtures. S. A. ADIBI, S. J. GRAY AND E. MENDEN.....	24
Studies on Physiology of Nutrition in Surinam. X. Protein Metabolism and Influence of Extra Calcium on the Growth of, and Calcium Metabolism in, Boarding School Children. R. LUYKEN, F. W. M. LUYKEN-KONING, T. H. CAMBRIDGE, T. DOHLE AND R. BOSCH.....	34
Studies on Physiology of Nutrition in Surinam. XI. The Skeleton of Aged People in Surinam. F. J. ZEEGELAAR, H. SANCHEZ, R. LUYKEN, F. W. M. LUYKEN-KONING AND W. A. VAN STAVEREN.....	43
The Estimation of Red Blood Cell Thiamine Concentration from Whole Blood and Serum Thiamine by Adjustments for Hematocrit. H. B. HOUSER, T. MYINT AND D. R. WEIR.....	46
Plasma Amino Acid Levels in Subjects Fed Isonitrogenous Diets Containing Different Proportions of Fat and Carbohydrate. M. E. SWENDSEID, C. YAMADA, E. VINYARD, W. G. FIGUEROA AND E. J. DRENICK.....	52
The Application of Social Science Research Methods to the Study of Food Habits and Food Consumption in an Industrializing Area. J. P. CHASSY, A. G. VAN VEEN AND F. W. YOUNG.....	56

No. 2, February 1967

Special Issue—SYMPOSIUM ON DIETARY CARBOHYDRATES IN MAN

Consumption of Carbohydrates in the United Kingdom. D. F. HOLLINGSWORTH AND J. P. GREAVES.....	65
Regional Variations in Carbohydrate Consumption in Czechoslovakia. K. OŠANCOVÁ.....	73
Localization of the Small-Intestinal Disaccharidases. A. DAHLQVIST.....	81
Carbohydrate Absorption in Malnourished Children. M. D. BOWIE, G. O. BARBEZAT AND J. D. L. HANSEN.....	89
Effect of Carbohydrate Ingestion in Humans on Intracellular Lipid Deposition in Tissue Culture. D. D. RUTSTEIN, W. P. CASTELLI AND R. J. NICKERSON.....	98
Evolutionary and Historical Changes in Dietary Carbohydrates. J. YUDKIN.....	108
Dietary Carbohydrates in Hyperlipemia (Hyperglyceridemia); Hepatic and Adipose Tissue Lipogenic Activities. P. T. KUO, L. FENG, N. N. COHEN, W. T. FITTS, JR. AND L. D. MILLER.....	116
Effect of Dietary Carbohydrate on the Glucose Tolerance Curve in the Normal and the Carbohydrate-Induced Hyperlipemia Subject. A. M. COHEN.....	126
Comparison of Effects of Fructose, Sucrose, Glucose, and Starch on Serum Lipids in Patients with Hypertriglyceridemia and Normal Subjects. N. A. KAUFMANN, R. POZNANSKI, S. H. BLONDHEIM AND Y. STEIN.....	131

Dietary Carbohydrate and Fat, Serum Lipoproteins, and Human Atherosclerosis. J. A. LITTLE, H. M. SHANOFF AND A. CSIMA.....	133
Some Metabolic Changes Induced by Low Carbohydrate Diets. W. A. KREHL, A. LOPEZ-S, E. I. GOOD AND R. E. HODGES.....	139
Dietary Fats and Carbohydrates, Blood Lipids, and Coronary Heart Disease. F. J. STARE.....	149
Carbohydrate Consumption and Dental Caries. R. L. HARTLES.....	152
Carbohydrates and Water Balance. W. L. BLOOM.....	157
Carbohydrate and the United Kingdom Food Manufacturer. R. J. L. ALLEN AND M. BROOK.....	163
Dietary Carbohydrate and Serum Triglycerides. J. T. ANDERSON.....	168
Dietary Carbohydrates and Serum Cholesterol. F. GRANDE.....	176
Dietary Carbohydrates in Normolipemia. I. MACDONALD.....	185
Effect of Bread in the Diet on Serum Cholesterol. J. J. GROEN.....	191
Dietary Carbohydrates and Low Cholesterol Diets: Effects on Serum Lipids of Man. R. E. HODGES, W. A. KREHL, D. B. STONE AND A. LOPEZ.....	198
Letter to the Editor: Growth of Infants and Preschool Children.....	209
Nutrition News.....	210

No. 3, March 1967

Regression of Dietary Cirrhosis in Rats Fed Alcohol and a "Super Diet." Evidence of the Non- hepatotoxic Nature of Ethanol. A. TAKADA, E. A. PORTA AND W. S. HARTROFT.....	213
Fatty Acid Absorption and Metabolism in Protein-Calorie Malnutrition. I. Effect of Fat-Free and Fat-Containing Diets on Fecal Fatty Acids. B. A. UNDERWOOD, S. A. HASHIM AND W. H. SEBRELL, JR.....	226
Effect of Four Multiples of a Basic Mixture of Essential Amino Acids on Nitrogen Retention of Adult Human Subjects. H. E. CLARK, K. FUGATE AND P. E. ALLEN.....	233
Plasma Amino Acid Response to Glucose Administration in Various Nutritive States. M. E. SWENDSEID, S. G. TUTTLE, E. J. DRENICK, C. B. JOVEN AND F. J. MASSEY.....	243
Metabolism of L-Ascorbic-4- ³ H Acid in Man. B. M. TOLBERT, A. W. CHEN, E. M. BELL AND E. M. BAKER.....	250
Hunger and Satiety Sensations in Men, Women, Boys, and Girls. L. F. MONELLO AND J. MAYER.....	253
Vitamin E Content of Infant Formulas and Cereals. M. W. DICKS-BUSHNELL AND K. C. DAVIS.....	262
Effect of a Low Protein Milk Powder Formula on the Initiation of Cure in Kwashiorkor Patients. J. G. PRINSLOO, P. J. PRETORIUS, A. S. WEHMEYER, L. S. DE VILLIERS, S. A. FELLINGHAM AND H. KRUGER.....	270
Parallel Food Classifications in Developing and Industrialized Countries. D. B. JELLIFFE.....	279
Current Concepts of Gluconeogenesis. A. B. EISENSTEIN.....	282

No. 4, April 1967

Interrelationships between Selected Nutritional, Clinical, and Sociological Measurements of Pre- adolescent Children from Independent Low Income Families. L. M. WAKEFIELD AND S. B. MERROW.....	291
--	-----

Volume Contents

v

Vitamin A Therapy in Children with Kwashiorkor. S. M. PEREIRA, A. BEGUM, T. ISAAC AND M. E. DUMM.....	297
Human Body Density and Fat of an Adult Male Population as Measured by Water Displacement. H. J. KRZYWICKI AND K. S. K. CHINN.....	305
Vitamin B ₁₂ Deficiency in the Rat: Effect on Serum Folate and Liver Formiminotransferase Activity. J. J. VITALE AND D. M. HEGSTED.....	311
Vitamin B ₆ Nutriture Studied in Obese Subjects during 8 Weeks of Starvation. E. VINYARD, C. B. JOVEN, M. E. SWENDEID AND E. J. DRENICK.....	317
Pre-Beta Lipoproteinemia. Its Bearing on the Dietary Management of Serum Lipid Disorders as Related to Ischemic Heart Disease. D. F. BROWN AND J. T. DOYLE.....	324
Objective Biochemical Determination of Dietary Adherence in the Young Coronary Male. A. I. FLEISCHMAN, T. HAYTON AND M. L. BIERENBAUM.....	333
Serum Amino Acid Response to Isocaloric Test Meals. E. S. YEARICK AND R. G. NADEAU.....	338
Interrelationships between the Influences of Dietary Carbohydrates and Fats on Fasting Serum Lipids. I. MACDONALD.....	345
Obesity: An Influence on High School Performance? H. CANNING AND J. MAYER.....	352
Administrative Aspects of Programs to Protect the Preschool Child.....	355
ASCN News: Program, The American Society of Clinical Nutrition, Seventh Annual Meeting.....	359
Abstracts of Papers.....	361
Letter to the Editor: Red Blood Cell Thiamine Concentration.....	373

No. 5, May 1967

Relationship of Morbidity to the Feeding Patterns of Navajo Children from Birth through Twenty-Four Months. J. G. FRENCH.....	375
Biochemical Studies in Phrynoderm (Follicular Hyperkeratosis). II. Polyunsaturated Fatty Acid Levels in Plasma and Erythrocytes of Patients Suffering from Phrynoderm. K. SEETHARAM BHAT AND B. BELAVADY.....	386
Effect of Daily MgO and Vitamin B ₆ Administration to Patients with Recurring Calcium Oxalate Kidney Stones. S. N. GERSHOFF AND E. L. PRIEN.....	393
Effect of Ethanol on Plasma Glycerol in Man. L. FEINMAN AND C. S. LIEBER.....	400
Fasting Plasma Amino Acids and Nitrogen Retention in Man Following Prolonged Supplementation with Wheat Gluten or Egg Whites. R. A. LEVINE, R. S. HARDING, G. J. ISAAC, E. T. BONGIOVANNI AND C. L. MILLER.....	404
Laboratory Findings in Iranian Village and Tribal Communities, 1964. E. KOHOUT, W. DUTZ AND A. PETROSIAN.....	410
Vitamin A, Vitamin E, and Lipids in Serum of Children with Cystic Fibrosis or Congenital Heart Defects Compared with Normal Children. M. J. BENNETT AND B. MEDWADOWSKI.....	415
Human Zinc Deficiency, Endocrine Manifestations and Response to Treatment. H. H. SANDSTEAD, A. S. PRASAD, A. R. SCHULERT, Z. FARID, A. MIALE, JR., S. BASSILLY AND W. J. DARBY.....	422
Failure of Long-Term Oral Vitamin B ₁₂ Therapy to Replenish Body B ₁₂ Stores. E. A. BRODY.....	443
Phenylketonuria. III. Measurement of Multiple Parameters of Liver Function. W. P. BOGER, J. McCLELLAND AND J. J. GAVIN.....	446
Tryptophan Metabolism in Women Using Steroid Hormones for Ovulation Control. J. M. PRICE, M. J. THORNTON AND L. M. MUELLER.....	452
Excretion of Vanilmandelic Acid by Obese Women. Preliminary Report. R. RATH, A. VESELKOVÁ, M. VIDLÁKOVA AND J. MAŠEK.....	457
Serum Lipids, Dietary Factors and Ischemic Heart Disease. S. L. MALHOTRA.....	462

Quantitative Estimation of Diets to Control Serum Cholesterol. E. S. FETCHER, N. FOSTER, J. T. ANDERSON, F. GRANDE AND A. KEYS.....	475
Malnutrition, Learning, and Behavior. N. S. SCRIMSHAW.....	493
Sugar Intake and Myocardial Infarction. J. YUDKIN AND J. MORLAND.....	503
Letter to the Editor and Reply: Riboflavin Requirement of Animal and Man Related to Protein Requirement or Energy Turnover.....	507
Nutrition News.....	511
Book Review	512

No. 6, June 1967

Special Issue—SYMPORIUM ON DETECTION OF NUTRITION DEFICIENCIES
IN MAN

Introductory Remarks. R. S. GOODHART.....	513
Blood and Urinary Vitamin Levels as Potential Indices of Body Stores. W. N. PEARSON.....	514
Discussion by A. E. SCHAEFER.....	526
Biochemical Alterations in Thiamine Deficiency—Their Interpretation. H. E. SAUBERLICH.....	528
Discussion by H. BAKER.....	543
Biochemical and Physiological Changes in Vitamin B ₆ Deficiency. H. LINKSWILER.....	547
Discussion by D. B. COURSIN.....	558
Biochemical and Hematologic Lesions in Folic Acid Deficiency. V. HERBERT.....	562
Discussion by C. M. LEEVY.....	570
Vitamin B ₁₂ Deficiency with Emphasis on Methylmalonic Acid as a Diagnostic Aid. L. A. BARNESS.....	573
Discussion by S. B. KAHN.....	578
Vitamin C Requirements in Stress. E. M. BAKER.....	583
Discussion by W. H. GRIFFITH.....	591
Tocopherol Deficiency in Man. H. J. BINDER AND H. M. SPIRO.....	594
Discussion by P. L. HARRIS.....	602
Are We Looking at the Right Enzyme Systems? R. E. OLSON.....	604
Discussion by J. G. BIERI.....	612
 Biotin and Folic Acid Deficiency. A. F. FLEMING AND H. P. BROQUIST.....	613
Tocopherol Storage and Depletion in Adipose Tissue and Plasma of Normal and Diabetic Human Subjects. V. McMAMERS, T. HOWARD, L. W. KINSELL, J. VAN DER VEEN AND H. S. OLcott.....	622
A Simple Method for Estimating Dietary Magnesium. R. MANALO, R. E. FLORA AND J. E. JONES.....	627
Magnesium Requirements in Adults. J. E. JONES, R. MANALO AND E. B. FLINK.....	632
Effect of Pepsin on the Absorption of Food Vitamin B ₁₂ and Iron. S. G. SCHADE AND R. F. SCHILLING.....	636
Accelerated Oxidative Catabolism of Ascorbic Acid in Siderotic Bantu. S. R. LYNCH, H. C. SEFTEL, J. D. TORRANCE, R. W. CHARLTON AND T. H. BOTHWELL.....	641
Importance of Zinc in Human Nutrition. A. S. PRASAD.....	648
Changing Concept of Malnutrition. W. H. SEBRELL, JR.....	653
Letters to the Editor: Dietary Carbohydrate in Hyperlipemia.....	659

Volume Contents

vii

No. 7, July 1967

Nutrition Study in British Honduras. B. N. NOCKS.....	661
Metabolic Aspects of Acute Starvation in Normal Humans (10 Days). C. F. CONSOLAZIO, L. O. MATOUSH, H. L. JOHNSON, R. A. NELSON AND H. J. KRZYWICKI.....	672
Metabolic Aspects of Acute Starvation in Normal Humans: Performance and Cardiovascular Evaluation. C. F. CONSOLAZIO, R. A. NELSON, H. L. JOHNSON, L. O. MATOUSH, H. J. KRZYWICKI AND G. J. ISAAC.....	684
Height, Weight, and Skin-Fold Thickness Data Collected during a Survey of Rural and Urban Populations of West Pakistan. B. A. UNDERWOOD, R. HEPNER, E. CROSS, A. MIRZA, K. HAYAT AND A. KALLUE.....	694
Vitamin B ₆ Content of Human Arterial and Venous Tissue. T. KHEIM AND J. E. KIRK.....	702
Body Composition of a Military Population, Fort Carson, 1963. I. Body Density, Fat, and Potassium 40. H. J. KRZYWICKI AND K. S. K. CHINN.....	708
Bone Marrow-Erythroid Morphology in Alcoholic Patients. T. JARROLD, J. J. WILL, A. R. DAVIES, P. H. DUFFEY AND J. L. BRAMSCHREIBER.....	716
Blood-Selenium Levels and In Vitro Red Blood Cell Uptake of ⁷⁵ Se in Kwashiorkor. R. F. BURK, JR., W. N. PEARSON, R. P. WOOD II AND F. VITERI.....	723
Zinc Nutrition of Children in Fars Province of Iran. J. EMINIANS, J. G. REINHOLD, G. A. KFOURY, G. H. AMIRHAKIMI, H. SHARIF AND M. ZIAI.....	734
Longitudinal Study of Serum Lipids: 12-Year Report. D. A. CLARK, M. F. ALLEN AND F. H. WILSON, JR.....	743
Nitrogen Balance Studies in Human Subjects on Various Diets. U. D. REGISTER, M. INANO, C. E. THURSTON, I. B. VYHMEISTER, P. W. DYSINGER, J. W. BLANKENSHIP AND M. C. HORNING.....	753
Aminoaciduria of Kwashiorkor. S. J. SAUNDERS, G. O. BARBEZAT, W. WITTMANN AND J. D. L. HANSEN.....	760
"Dilution Anemia" Associated with Multiple Infusions of a Fat Emulsion. D. C. ZELLNER AND J. M. IACONO.....	766
Relationship of Obesity to Serum Triglyceride, Cholesterol, and Uric Acid, and to Plasma Glucose Levels. L. E. HOLLISTER, J. E. OVERALL AND H. L. SNOW.....	777
Hematologic Response to Vitamin E in the Anemia Associated with Protein-Calorie Malnutrition. J. A. WHITAKER, E. G. FORT, S. VIMOKESANT AND J. S. DINNING.....	783
Muscle Strength in Obese Adult Females during Weight Loss. D. PARGMAN AND J. FELDSCHUH.....	790

No. 8, August 1967

Relationship between Plasma-Vitamin E Level and Peroxide Hemolysis Test in Human Subjects. P. J. LEONARD AND M. S. LOSOWSKY.....	795
Osteoporosis in Johannesburg Bantu Males: Its Relationship to Siderosis and Ascorbic Acid Deficiency. S. R. LYNCH, I. BERLOWITZ, H. C. SEFTEL, G. B. MILLER, P. KRAWITZ, R. W. CHARLTON AND T. H. BOTHWELL.....	799
Relationship between Total Cholesterol and Cholestryl Esters with Age in Human Blood Plasma. A. LOPEZ-S, W. A. KREHL AND R. E. HODGES.....	808
Frequency of Size of Meals on Serum Lipids, Nitrogen and Mineral Retention, Fat Digestibility, and Urinary Thiamine and Riboflavin in Young Women. M. I. IRWIN AND R. M. FEELEY.....	816
Nitrogen Balances of Adult Human Subjects Who Consumed <i>Opaque-2</i> Maize as the Principal	

Source of Protein. H. E. CLARK, P. E. ALLEN, S. M. MEYERS, S. E. TUCKETT AND Y. YAMAMURA.....	825
Dietetic Analysis and Blood Lipids. Chemical and Isotopic Studies in Vascular Disease among Indian Diabetics. V. V. GOSSAIN AND M. M. S. AHUJA.....	834
Iron Status of Menstruating Women. E. R. MONSEN, I. N. KUHN AND C. A. FINCH.....	842
Vitamins, Total Cholesterol, and Triglycerides in 642 New York City School Children. H. BAKER, O. FRANK, S. FEINGOLD, G. CHRISTAKIS AND H. ZIFFER.....	850
Data Analysis Strategy for Nutritional Survey of 642 New York City School Children. H. ZIFFER, O. FRANK, G. CHRISTAKIS, L. TALKINGTON AND H. BAKER.....	858
Malabsorption in the Tropics: A Second Look. I. The Role of Protein Malnutrition. L. G. MAYORAL, K. TRIPATHY, F. T. GARCIA, S. KLAHR, O. BOLAÑOS AND J. GHITIS.....	866
Vitamin E Deficiency in Uganda. J. A. TULLOCH AND N. K. SOOD.....	884
Pellagra in Istria, Yugoslavia. R. BUZINA, I. GREGURIĆ, A. BRODAREC, M. JUŠIĆ AND A. HORVAT.....	888
Sodium and Potassium Metabolism during Starvation. G. J. HAMWI, M. C. MITCHELL, R. G. WIELAND, F. A. KRUGER AND S. S. SCHACHNER.....	897
Biotin Content of Blood in Normal Infants and Adults. H. N. BHAGAVAN AND D. B. COURSIN.....	903
Nutrients in United States Food Supply. A Review of Trends, 1909-1913 to 1965. B. FRIEND.....	907
Trends in the Program of the Nutrition Foundation. H. L. SIPPLE.....	915
Nutrition News.....	920
Errata.....	921

No. 9, September 1967

Presidential Address: Nutrition of the Future. R. E. HODGES.....	923
Nitrogen Retention in Adult Man: A Possible Factor in Protein Requirements. H. FISHER, M. K. BRUSH, P. GRIMINGER AND E. R. SOSTMAN.....	927
A Short Dietary Method for Epidemiologic Studies. II. Variability of Measured Nutrient Intakes. J. H. HANKIN, W. E. REYNOLDS AND S. MARGEN.....	935
Red Blood Cell-Transketolase Activity in Malnourished Alcoholics with Cirrhosis. J. FENNELL, O. FRANK, H. BAKER AND C. M. LEEVY.....	946
Greater Reliability of the Triceps Skin Fold over the Subscapular Skin Fold as an Index of Obesity. C. C. SELTZER AND J. MAYER.....	950
Growth of Hong Kong Children on Diets Containing Rice or Rice and Wheat with and without Nutrient Supplements. P. C. FRY, R. M. LEVERTON AND S. GOKSU.....	954
Urinary Excretion of Pantothenic Acid by Diabetic Patients and by Alloxan-Diabetic Rats. M. HATANO, R. E. HODGES, T. C. EVANS, R. F. HAGEMANN, D. B. LEEPER, W. B. BEAN AND W. A. KREHL.....	960
A Rapid Analytical System for Determining Serum Lipids. W. A. KREHL, A. LOPEZ-S AND E. I. GOOD.....	968
Triceps Skin-Fold Thickness of Vermont Adolescents. S. B. MERROW.....	978
Weight Gain, Serum Lipids, and Vascular Disease in Diabetics. W. REINHEIMER, G. BLIFFEN, J. MCCOY, D. WALLACE AND M. J. ALBRINK.....	986
Ethanol, Lipase Activity, and Serum-Lipid Level. M. VERDY AND A. GATTEREAU.....	997
Intestinal Folate Conjugase Activity in Tropical Spure. F. A. KLIPSTEIN.....	1004
Plasma Levels of Free Fatty Acids in Adolescents. F. P. HEALD, G. ARNOLD, W. SEABOLD AND D. MORRISON.....	1010
Microbiological Assay of Serum and Whole-Blood Folic Acid Activity. J. M. COPPERMAN.....	1015

Volume Contents

ix

Interpretation of Biological Data on One Ethnic or Regional Group May Not Be Equally Applicable to Other Groups. A. R. P. WALKER.....	1025
Interpretation of Human Measurements. G. V. MANN.....	1040
Nutrition News: McCollum Award.....	1043

No. 10, October 1967

Adolescent Dieters: Who Are They? Physical Characteristics, Attitudes and Dieting Practices of Adolescent Girls. J. T. DWYER, J. J. FELDMAN AND J. MAYER.....	1045
Plasma Fatty Acids in Normolipemic and Hyperlipemic Subjects during Fasting and after Linoleate Feeding. M. Z. NICHAMAN, C. C. SWEELEY AND R. E. OLSON.....	1057
Metabolism of Linoleic Acid- ^{14}C in Normolipemic and Hyperlipemic Humans Fed Linoleate Diets. M. Z. NICHAMAN, C. C. SWEELEY AND R. E. OLSON.....	1070
Appraising the Health of Culturally Deprived Children. O. C. STINE, J. B. SARATSIOTIS AND O. F. FURNO.....	1084
Structural Properties of Triglycerides of Human Adipose Tissue, Heart, and Liver. H. KAUNITZ, R. E. JOHNSON AND C. BELTON.....	1096
Fat, Carbohydrate, Salt, and Weight Loss. W. BORTZ, A. WROLDSON, P. MORRIS AND B. ISSEKUTZ, JR.....	1104
Relationship between Serum Lipids and Aortic Atherosclerotic Lesions in Sudden Accidental Deaths in Guatemala City. J. MÉNDEZ AND C. TEJADA.....	1113
Concordance among Clinical Signs Suggestive of Malnutrition. R. W. HILLMAN.....	1118
Estimation of Body Water Compartments of Preschool Children. I. Normal Children. M. A. FLYNN, F. M. HANNA AND R. N. LUTZ.....	1125
Estimation of Body Water Compartments of Preschool Children. II. Undernourished Children. M. A. FLYNN, F. M. HANNA, R. Y. ASFOUR AND R. N. LUTZ.....	1129
An Approach Toward the Solution of the World Food Problem with Special Emphasis on Protein Supply. E. E. HOWE, G. R. JANSEN AND M. L. ANSON.....	1134

No. 11, November 1967

Note from the Editor. MILTON E. RUBINI.....	1149
Guest Editorial: Dietary Epidemiology. ANCEL KEYS.....	1151
Effect of Reduced Protein Intake on Nitrogen Loss from the Human Integument. E. R. SIRBU, S. MARGEN AND D. H. CALLOWAY.....	1158
Nitrogen Metabolism in Children with Congenital Cardiac Defects and Severe Growth Retardation. F. L. IBER, D. B. CHEEK AND K. P. WOLF.....	1166
Comparative Evaluation of a Whole-Body Counter Potassium 40 Method for Measuring Lean Body Mass. G. S. ROESSLER AND B. G. DUNAVANT.....	1171
Gonadal Biopsies in Twelve Cases of Inanition Hypopituitarism. P. G. MOE, J. E. CAUGHEY AND W. E. DUTZ.....	1179
Effects of Recumbency and Space Flight on Bone Density. P. B. MACK AND P. A. LACHANCE.....	1194
Malabsorption in the Tropics. 2. Tropical Sprue versus Primary Protein Malnutrition: Vitamin B ₁₂ and Folic Acid Studies. J. GHITIS, K. TRIPATHY AND G. MAYORAL.....	1206
Gluttony. I. An Experimental Study of Overeating Low- or High-Protein Diets. D. S. MILLER AND P. MUMFORD.....	1212

Gluttony. 2. Thermogenesis in Overeating Man. D. S. MILLER, P. MUMFORD AND M. J. STOCK.....	1223
Decreased Elasticity of the Auricular Cartilage in Ugandan Children with Kwashiorkor. R. E. BROWN AND D. B. JELLIFFE.....	1230
A History of Rickets in the United States. SISTER MARY THEODORA WEICK.....	1234
Intracellular Glucose 6-Phosphate Compartmentation and Glycogen Synthesis. D. ZAKIM AND R. H. HERMAN.....	1242
Bacteria, Absorption and Malabsorption. M. H. FLOCH.....	1244
Letters to the Editor: Effects on Serum Lipids of Different Dietary Proteins and Carbohydrates. A. KEYS.....	1249
R. E. HODGES.....	1250
Erratum.....	1252

No. 12, December 1967

Special Issue—NUTRITION RESEARCH IN INDONESIA AND THAILAND

Editorial: Approach to a Promising Program for the Protection of the Preschool Child. P. GYÖRGY.....	1253
Nutrition Research in Indonesia and Thailand	
Introduction. P. GYÖRGY.....	1258
<i>Indonesia:</i>	
Health, Development, and Nutritional Survey of Preschool Children in Central Java. LIEM TJAY TIE, OEY KHOEN LIAN, THIO WIE LIONG-ONG AND C. S. ROSE.....	1260
Red Palm Oil in the Prevention of Vitamin A Deficiency. A Trial on Preschool Children in Indonesia. OEY KHOEN LIAN, LIEM TJAY TIE, C. S. ROSE, D. D. PRAWIRANEGARA AND P. GYÖRGY.....	1267
Vitamin A Blood Serum Levels and Electroretinogram in 5- to 14-Year Age Group in Indonesia and Thailand. A. A. GENEST, DJOKO SARWONO AND P. GYÖRGY.....	1275
Influence of Early Malnutrition on Some Aspects of the Health of School-Age Children. LAUW TJIN GIOK, C. S. ROSE AND P. GYÖRGY.....	1280
Evaluation of Mental Development in Relation to Early Malnutrition. PEK HIEN LIANG, TJIOOK TIAUW HIE, OEY HENK JAN AND LAUW TJIN GIOK.....	1290
Serum Free Amino Acids in Children with Protein-Calorie Deficiency. POEY SENG HIN, C. S. ROSE, MUHILAL AND SITI ZURAIDA.....	1295
Nutritional Value of Rubber-Seed Protein. LAUW TJIN GIOK, SAMSUDIN, HUSAINI AND IGNATIUS TARWOTJO.....	1300
Rational Use of Skim Milk in a Complete Infant Formula. I. Experimental Observations. SAMSUDIN AND P. GYÖRGY.....	1304
Rational Use of Skim Milk in a Complete Infant Formula. II. Clinical Study in Premature In- fants. SAMSUDIN AND M. L. WILLIAMS.....	1308
<i>Thailand:</i>	
Studies of Bladder Stone Disease in Thailand.	
I. Introduction and Description of Area Studied. S. B. HALSTEAD AND A. VALYASEVI.....	1312
II. Hospital Experience. Urolithiasis at Ubol Provincial Hospital, 1956-1962. C. CHUTIKORN, A. VALYASEVI AND S. B. HALSTEAD	1320

Volume Contents

xi

III. Epidemiological Studies in Ubol Province. S. B. HALSTEAD AND A. VALYASEVI	1329
IV. Dietary Habits, Nutritional Intake, and Infant Feeding Practices among Residents of a Hypo- and Hyperendemic Area. A. VALYASEVI, S. B. HALSTEAD, S. PANTUWATANA AND C. TANKAYUL	1340
V. Dietary Habits and Disease Prevalence. S. B. HALSTEAD, A. VALYASEVI AND P. UMPAIVIT . .	1352
VI. Urinary Studies in Children, 2 to 10 Years Old, Resident in a Hypo- and Hyperendemic Area. A. VALYASEVI, S. B. HALSTEAD AND S. DHANAMITTA	1362
VII. Urinary Studies in Newborn and Infants of Hypo- and Hyperendemic Areas. A. VALYASEVI AND S. DHANAMITTA	1369
VIII. Sulfate Excretion by Newborn Infants: Possible Relationship of Protein Malnutrition to Bladder Stone Disease. R. VAN REEN, A. VALYASEVI AND S. DHANAMITTA	1378
IX. Effect of Orthophosphate and Fat-Free Powdered Milk Supplementation on the Occurrence of Crystalluria. H. DHANAMITTA, A. VALYASEVI AND R. VAN REEN	1387
Subject index	1393
Author index	1406
Contents of Volume 20	1409



